



OIEP

#3

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/954,773A

DATE: 02/10/2002
TIME: 13:24:59

Input Set : A:\EP.txt
Output Set: N:\CRF3\02102002\I954773A.raw

ENTERED

3 <110> APPLICANT: Southern Illinois University
4 Lightfoot, David A
5 Gibson, Paul T
6 Meksem, Khalid
8 <120> TITLE OF INVENTION: SOYBEAN SUDDEN DEATH SYNDROME RESISTANT SOYBEANS, SOYBEAN
CYST NEMATODE
9 RESISTANT SOYBEANS AND METHODS OF BREEDING AND IDENTIFYING RESISTANT PLANTS
11 <130> FILE REFERENCE: 1268/2/2
C--> 13 <140> CURRENT APPLICATION NUMBER: US/09/954,773A
C--> 13 <141> CURRENT FILING DATE: 2002-01-22
13 <150> PRIOR APPLICATION NUMBER: 09/007,119
14 <151> PRIOR FILING DATE: 1998-01-14
16 <160> NUMBER OF SEQ ID NOS: 20
18 <170> SOFTWARE: PatentIn version 3.1
20 <210> SEQ ID NO: 1
21 <211> LENGTH: 527
22 <212> TYPE: DNA
23 <213> ORGANISM: Glycine max
25 <220> FEATURE:
26 <221> NAME/KEY: misc_feature
27 <222> LOCATION: (1)..(527)
28 <223> OTHER INFORMATION: n is a, c, g, or t/u
31 <400> SEQUENCE: 1
32 tgttctagat agttcgcaat tcaatcaaatt ttcccaatta taattgaata aaaagattca 60
34 tgaaatcagg tgatcaagcg aaaaataagc attaagcgta gaagagaagc aataacattt 120
36 ttttattaaa taataaaaga gtaattacat aaaaatatgt tcgattacat taaaccccaa 180
38 caaaggatga atttagcttc tcatgaccat ggggaaaatc aaacttgatg aacaagaaga 240
40 tgaagaagaa tccttaagga taaacactgc ctagctccaa tgtgctctct agtattttat 300
42 ctttcaaaaa tccccaagaa cccctaattt tcagtaagaa gccatttttc aatcagaagc 360
44 ccattttcaa tcaagaagcc cattttcaat cagaagccca ttttcaatca gaagccatt 420
46 ttcaatcaga agccattttt caatcagaag cccattttat aattgtattc ccaaaacttg 480
48 agattcttga acgtaaatta ttagtaaatt gtaatcacct ctgtaaa 527
51 <210> SEQ ID NO: 2
52 <211> LENGTH: 815
53 <212> TYPE: DNA
54 <213> ORGANISM: Glycine max
56 <220> FEATURE:
57 <221> NAME/KEY: misc_feature
58 <222> LOCATION: (1)..(815)
59 <223> OTHER INFORMATION: n is a, c, g, or t/u
62 <400> SEQUENCE: 2
63 atgattacgc caagctattt aggtgacact actagaatac tcaagctatg catccaacgc 60
65 gttgggagct ctcccatatg gtcgacctgc aggcggccgc actagtattt cagaagccca 120
67 aaggtaacag caataagtaa tcccttgttt ataagatccc agaacttcca gtttatttaa 180

RAW SEQUENCE LISTING

DATE: 02/10/2002

PATENT APPLICATION: US/09/954,773A

TIME: 13:24:59

Input Set : A:\EP.txt

Output Set: N:\CRF3\02102002\I954773A.raw

```

69 tgaaaatgca ataacatcgg ctagtttcac aagtaatata caaatcggaa catcacattg 240
71 actacaatat atagtacata aattaacact aagaaacctc cttgatttga tattatgcat 300
73 ttacctatgt tgttccacaa gaatatactc aaatgacttt gccttgattt aaattatcac 360
W--> 75 gatgtaacac aaacaaagat gatantttgt cgatcaactg ttcagcacca agagagccct 420
W--> 77 ccccaacaatc aactcaggtt ttcacttttg gtgcttgaaa atgagtggca catgnaaaag 480
W--> 79 caagagtent ctttgacaaa tgtgcctgcc ganagttatc antacttact aacaagataa 540
W--> 81 tgagccaaaa catcatctgg gncatcaacc ttcatgnctt tntcaagttt atacctatna 600
W--> 83 ntnactangt cttatattnn canntgggtga ttacanttac nantaagttt agcttnaaga 660
W--> 85 aatncaagtt ttngggactc catgcctngn cnggntttcn natccgtcgg ccagggcggn 720
W--> 87 cnggnncact gntnggnagn cccanttnn cagancacng ncccntttcc attccnggnc 780
W--> 89 cntcncttc aangacngcc ggngaaancn ngggt 815
92 <210> SEQ ID NO: 3
93 <211> LENGTH: 435
94 <212> TYPE: DNA
95 <213> ORGANISM: Glycine max
97 <220> FEATURE:
98 <221> NAME/KEY: misc_feature
99 <222> LOCATION: (1)..(435)
100 <223> OTHER INFORMATION: n is a, c, g, or t/u
103 <400> SEQUENCE: 3
104 gcagatgtaa ctgttccac aatatctaatt attctagttc tagatgaaaa tatttttttc 60
106 ccatagcaag caaagtatgg atttgtcatt ttccagagac gaagaactct caacaaacat 120
108 gtttatagta acttcattgc aaaactcaac aaatagattt ttggaacctt aatataataa 180
110 aattcaacag tcttctttta ttttattctg ctcttacctt ctcataggat catatagaat 240
112 ttaaccctac aagctctcaa aaaacaatcc attattatgc tccttatcca ataaaacaaa 300
W--> 114 accatagagt gattctcaaa atgaagattg acaaaggcaa aaagtatatgc tggntcaata 360
W--> 116 gcttctttat aattntcttc atcttgacc ntcccngcct taggnggtct ccattgtcaa 420
W--> 118 tccaaaggtn ntcgn 435
121 <210> SEQ ID NO: 4
122 <211> LENGTH: 183
123 <212> TYPE: DNA
124 <213> ORGANISM: Glycine max
126 <220> FEATURE:
127 <221> NAME/KEY: misc_feature
128 <222> LOCATION: (1)..(183)
129 <223> OTHER INFORMATION: n is a, c, g, or t/u
132 <400> SEQUENCE: 4
W--> 133 ggtaccggg gatcctctag agtcgacctg cagggaggcg aatgtnatgt tganctttgc 60
135 tcgctcatat ggccttacag gggttgccga attagtgtga aggtaattcg gtaaatggat 120
W--> 137 aatattgtat tcatttnata tttnatgatg ttacaagtnc aaggnataa ctgatgcctg 180
139 agt 183
142 <210> SEQ ID NO: 5
143 <211> LENGTH: 499
144 <212> TYPE: DNA
145 <213> ORGANISM: Glycine max
147 <220> FEATURE:
148 <221> NAME/KEY: misc_feature
149 <222> LOCATION: (1)..(499)
150 <223> OTHER INFORMATION: n is a, c, g, or t/u

```

RAW SEQUENCE LISTING

DATE: 02/10/2002

PATENT APPLICATION: US/09/954,773A

TIME: 13:24:59

Input Set : A:\EP.txt

Output Set: N:\CRF3\02102002\I954773A.raw

```

153 <400> SEQUENCE: 5
154 caggtagaca aatctgatgg tactgaagtt ggtcatataa ttaaaaagtt ccctctttta      60
W--> 156 aagcccagag aatatgtgct agcttgggaag tngtgggagg ggagtgatga aacattttac      120
158 tgttttatga aggtaataca ccaattatta tggttttttg tttataaaaa tgtgaataat      180
160 tgtcaatcgt gattgcatta tctctccttt actctgtctc ttcacctttt ttaccttttt      240
162 atttgagagg aagaatccat gtagtaaaaa atgatgataa aattgttaga aaatatagtg      300
164 tcatgtaatt agagattcag attataactt agaagacact attattttca tgtaatacta      360
166 tccacgggta attatcaata ctgacatatt ttcactcaaa atattctggg tttctcatta      420
W--> 168 tatacattta aataggagct attanccatt gcaagcttgg gtttggaggc cttccgatgc      480
W--> 170 cttgttggga ttgngacca                                499
173 <210> SEQ ID NO: 6
174 <211> LENGTH: 500
175 <212> TYPE: DNA
176 <213> ORGANISM: Glycine max
178 <220> FEATURE:
179 <221> NAME/KEY: misc_feature
180 <222> LOCATION: (1)..(500)
181 <223> OTHER INFORMATION: n is a, c, g, or t/u
184 <400> SEQUENCE: 6
W--> 185 nagnccagga acccacacat acagacaatt aaaaccgttg gatgaaaatc atactactca      60
W--> 187 taaattgaaa atatatacgt aagancttca tctaacagtg ctagtccaag aatgcgtaaa      120
W--> 189 tgcagggnat ccatttccat actaaaatgg acaaaaactta tttttttttt ttagcggcaa      180
W--> 191 acgttaatta ttaatttttt ttagtacaag ggatcaaacc angacctttc ccttctttcc      240
193 atctttcttg accacccaac caaccttata tctccacaaa acctattata tgttgttctt      300
W--> 195 cggggactat cagaattgga gtttaacctc gggcantcaa tctacataat ccttgatttn      360
W--> 197 atttngtgaa gttctaaagc cacaggcatt atttatntta ttntttctgn agtaaccnc      420
W--> 199 catatgttgg tnnataaggg tangnatnaa aatncnttgg ntggtnnena tttgcncttn      480
W--> 201 cnaggccggg gatggntttt                                500
204 <210> SEQ ID NO: 7
205 <211> LENGTH: 189
206 <212> TYPE: DNA
207 <213> ORGANISM: Glycine max
209 <220> FEATURE:
210 <221> NAME/KEY: misc_feature
211 <222> LOCATION: (1)..(189)
212 <223> OTHER INFORMATION: n isa, c, g, or t/u
215 <400> SEQUENCE: 7
W--> 216 nnacaanana ncaggggatc ctctagagtc gacctgcagt gatactagaa ctnaatgaac      60
W--> 218 agggagagag agagagagag aganantnaa nataacgatg aagctctccc tattgacggt      120
W--> 220 gttcattgta gcaatagcat cgttatctct tattattgct ggttcatcat natctcaatt      180
222 ccagtggca                                189
225 <210> SEQ ID NO: 8
226 <211> LENGTH: 724
227 <212> TYPE: DNA
228 <213> ORGANISM: Glycine max
230 <220> FEATURE:
231 <221> NAME/KEY: misc_feature
232 <222> LOCATION: (1)..(724)
233 <223> OTHER INFORMATION: n is a, c, g, or t

```

RAW SEQUENCE LISTING

DATE: 02/10/2002

PATENT APPLICATION: US/09/954,773A

TIME: 13:24:59

Input Set : A:\EP.txt

Output Set: N:\CRF3\02102002\I954773A.raw

```

236 <400> SEQUENCE: 8
237 aattttttat ataagttgca aaatttaggg acttatttat tattaaatta tttgtaggga      60
239 ctaattttatc atattttttg tatattcagg aattaaattt aatttttcat ctttcaatac      120
241 taactttatta acgtttcaca ttttcaaaga cgagtctagc tttttataat tttttttcct      180
243 aaaatatatt ttttgtcctc ataaatatga aaatatTTaa aattcgttcc taattttttt      240
245 ttcaaagcat ctttccttct cacaaaattg aaatgtatca tttttttttg ttcaaaagtt      300
247 taaataaatt tgaacctaat atgacatttt atatcggtta tacatataac tgatataaac      360
249 atcaagtttt ttatatcaat gatacctata actgatatca aatgtgacaa ttatatatat      420
251 aattaatgta aaaaagtcac aaatataatt tattttgagt caaaaaataa tatattttta      480
W--> 253 ttatttttgaa gatgaaaaag gataaattta aaacatttgt gtgangatga aaaactagat      540
255 gttttttttc ctggttttaa tgcaaaacca atgctatttt atttaaattt tacctttttt      600
W--> 257 ttataattac nccacaaaaa aaccgtttgg tgttacaaat ttganttaaa ttctnttggt      660
W--> 259 tattaaaaag ananattaat tnggaanggt ctttttnaaa acnctncngt cnantaacna      720
261 atct                                                                                          724
264 <210> SEQ ID NO: 9
265 <211> LENGTH: 801
266 <212> TYPE: DNA
267 <213> ORGANISM: Glycine max
269 <220> FEATURE:
270 <221> NAME/KEY: misc_feature
271 <222> LOCATION: (1)..(801)
272 <223> OTHER INFORMATION: n is a, c, g, or t
275 <400> SEQUENCE: 9
W--> 276 acgccagtga ntgtaatacg actcctatag ggccaattgg ccaagtcggc cgagctcgaa      60
278 ttcgtcgacc tcgagggatc acgctaataa tatattatta atcaactgct tcaatagagt      120
280 gcacacaccc tatctttcat aaaattacta cactttttta tttttgtaat aaaaaaccta      180
282 gaaaaactca ttatgaaaca gatgatgtac ttttaacact ctgtcggcct ctctctctct      240
284 attatatatt gatttaaatt tattgagaat tatatttttg ttgggtctca tttattatat      300
286 tttattaatt ggatccgggc cctctagatg cggccgcgat cataagcttg agtattctat      360
288 agtgtcacct aaatagcttg gcgtaatcat ggctcatagct gtttcctgtg tgaaattggt      420
W--> 290 atccgctcac aattccacac aacatacgag ccggaagcat aaagtgtnaa gcctggggtn      480
W--> 292 cctaattgagt gagctaactc acattaattg cettgcegtc actgcccgtt ttccagtcng      540
W--> 294 gaaacctgtc ctgccagctg cattaatgaa tcngccaacc cncggggana agcngtttgc      600
W--> 296 ntatgggcgc tcttnccgct tctcgtctca ntgaactcgt gcgctcngtc nttcngntgc      660
W--> 298 cgcgaacggt atcanencac tcnaangnng taaatacggg tatccaccna accnngggga      720
W--> 300 naaccnngga aaaaacatgt nanccaaaag gccnccaaaa ggccangaaa cnttnaaaag      780
W--> 302 gcccnnttgc ttgnctttnt n                                                                 801
305 <210> SEQ ID NO: 10
306 <211> LENGTH: 809
307 <212> TYPE: DNA
308 <213> ORGANISM: Glycine max
310 <220> FEATURE:
311 <221> NAME/KEY: misc_feature
312 <222> LOCATION: (1)..(809)
313 <223> OTHER INFORMATION: n is a, c, g, or t
316 <400> SEQUENCE: 10
W--> 317 nnnnnnttgt aaacgacgca gtgaatgtat acgaccacta tagggcaatg gccaaagtcgg      60
319 ccgagctcga attcgctcgac ctcgagggat ctttttatgt tggtagctac tgtaatatca      120
321 tcttgacttt ttaactttta agtcatactc cttttggact catatataag caaaagagtg      180

```

RAW SEQUENCE LISTING

DATE: 02/10/2002

PATENT APPLICATION: US/09/954,773A

TIME: 13:24:59

Input Set : A:\EP.txt

Output Set: N:\CRF3\02102002\I954773A.raw

```

323 gtcttgtatg tccgacttaa atataagcaa atctaactaa ttttgtccta ttttaatactt 240
325 tcattcctaa aacacccttc atttaattct aattctatatt ocaataactc ttttttattc 300
327 atgataacaa gttccaatga aggacatttt agaaataacc ttatttttta tttagagatta 360
329 gtaaaattaa atgatgtgaa ctaactttct taattaatgt gaaattagtt attttttctt 420
331 atatacgagt ccaaagggag taccaaattt cacaaatgta ctaaaatgta ttatatgctt 480
W--> 333 cttttttaatt catcttttgc gcatanctac ttagctactg tgcctctgac cgggcccctc 540
335 agatgcggcc gcattcataa gcttgagtat ctatagtgtc cctaaatagc ttggcgtatc 600
W--> 337 atggtcatag ctgtttccng tgtgaaattg ttatccgctc acaattccac acaacatacg 660
W--> 339 anccggaagc ataaaagtgt taagccnggg gtgcctaata agtgagctaa ctcacattaa 720
W--> 341 ttgcgttgcg ctactgccc gcttccnatt cgggaaactg tctgncanc tgcattaatg 780
W--> 343 aatcnggcca acccncnggg aaaaggcgg 809
346 <210> SEQ ID NO: 11
347 <211> LENGTH: 810
348 <212> TYPE: DNA
349 <213> ORGANISM: Glycine max
351 <220> FEATURE:
352 <221> NAME/KEY: misc_feature
353 <222> LOCATION: (1)..(810)
354 <223> OTHER INFORMATION: n is a, c, g, or t/u
357 <400> SEQUENCE: 11
W--> 358 acngccagtg aattgtaata cgactcctat agggcgaatt ggccaagtgc gccgagctgc 60
360 aattcgtcga cctcgaggga totataatat ttctgacagc taccttttta tttagcttgc 120
362 agaggggctg attttggaga aaacatcatc catggtataa agtccgttta gattccagct 180
364 attgttcaca ttcatccctt acatatgaga atatccctat aagctgaaac taacttttac 240
366 aaacaaacat gcaccgaacc attaaagttt gacttaatat cgggggtata atgaccttaa 300
368 ttcagaaatt cacataaata actaaaagta agttgtattt tttttatgtc tggatttact 360
370 gcacaaacta aacaaaagtt tgtggattta gacataaaaa ataccaatgc tgtgtgaaaa 420
W--> 372 taagaaatgg tggatcatata gacaagtttc ttttctgttt tcttttaatt gcagtcnaag 480
W--> 374 ccatcangag gttcatgtaa ttaaccaaac tagacgttga ctttttggtt tatccttttg 540
376 tagaatagca agcaagtcac tataaatctg gccattggga cagcttagtt taactccgcg 600
W--> 378 cgcaaatttg ttaaaatatt naataataat atcacctaaa atcatatttg tcanttcatt 660
W--> 380 ttgttttang ttatatcaat tattattttt taccttacnt cctttataat ntcaatgatg 720
W--> 382 ggacccaaaa aattatcaaa tacnttnaag cnttatttat tattaattaa ncctttaatt 780
W--> 384 ataattaaaa attcnattta attttttaan 810
387 <210> SEQ ID NO: 12
388 <211> LENGTH: 777
389 <212> TYPE: DNA
390 <213> ORGANISM: Glycine max
392 <220> FEATURE:
393 <221> NAME/KEY: misc_feature
394 <222> LOCATION: (1)..(777)
395 <223> OTHER INFORMATION: n is a, c, g, or t/u
398 <400> SEQUENCE: 12
W--> 399 anangattcg ncagctattt aggtgacata tagaaatact caagcttatg catgcggccg 60
401 catctagagg gcccgatct ttcggttgaa gcaaaattga agtcttttgc tcatttttat 120
403 caaattcttt aatgaaaagt taattacata aaatatatta gtagaagcaa ttttacacag 180
405 ttattattta aaaaaattac acagttattc aataacaaat tacaatatat tataaggtta 240
407 taataaatat tttaaaattc atataaaaga tgacttatta ataagttgat aatgtaaatt 300
409 ttttacacta ttaactcat tttagcgaat cttagcgaca acatactatt tttttcatga 360

```

VERIFICATION SUMMARY

DATE: 02/10/2002

PATENT APPLICATION: US/09/954,773A

TIME: 13:25:00

Input Set : A:\EP.txt

Output Set: N:\CRF3\02102002\I954773A.raw

L:13 M:270 C: Current Application Number differs, Replaced Current Application No
L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:75 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:77 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:79 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:81 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:83 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:85 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:87 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:89 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:114 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:116 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:118 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3
L:133 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:137 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4
L:156 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:168 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:170 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5
L:185 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:187 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:189 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:191 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:195 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:197 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:199 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:201 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6
L:216 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:218 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:220 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7
L:253 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8
L:257 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8
L:259 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8
L:276 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:290 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:292 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:294 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:296 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:298 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:300 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:302 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9
L:317 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:333 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:337 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:339 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:341 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:343 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:358 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:372 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/954,773A

DATE: 02/10/2002

TIME: 13:25:00

Input Set : A:\EP.txt

Output Set: N:\CRF3\02102002\I954773A.raw

L:374 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:378 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:380 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:382 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11